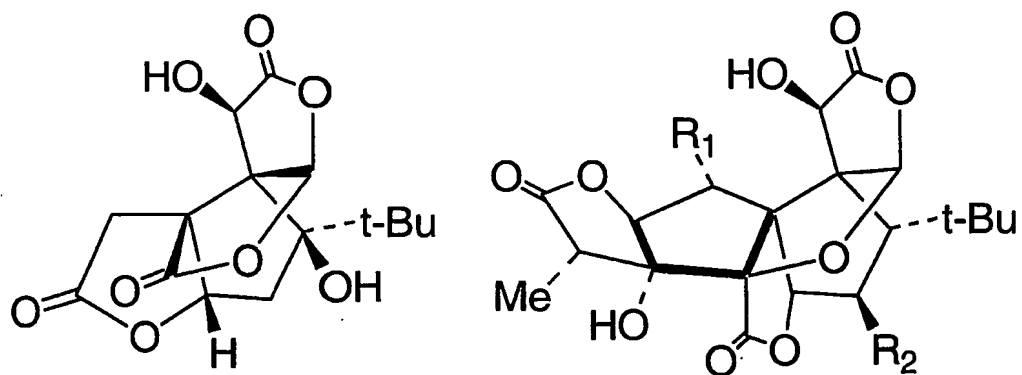


**FIGURE 1****1 bilobalide**

|                            | <u>R<sub>1</sub></u> | <u>R<sub>2</sub></u> |
|----------------------------|----------------------|----------------------|
| <b>2</b> ginkgolide A (GA) | H                    | H                    |
| <b>3</b> ginkgolide B (GB) | OH                   | H                    |
| <b>4</b> ginkgolide C (GC) | OH                   | OH                   |
| <b>5</b> ginkgolide J (GJ) | H                    | OH                   |

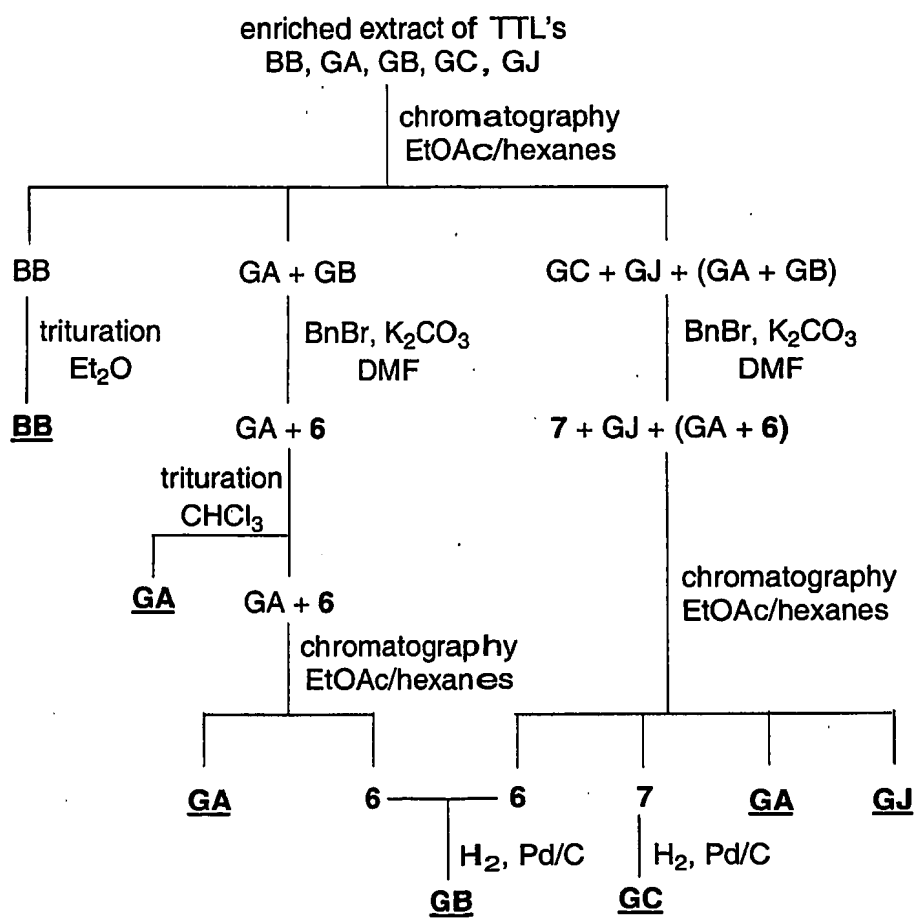
**FIGURE 2**

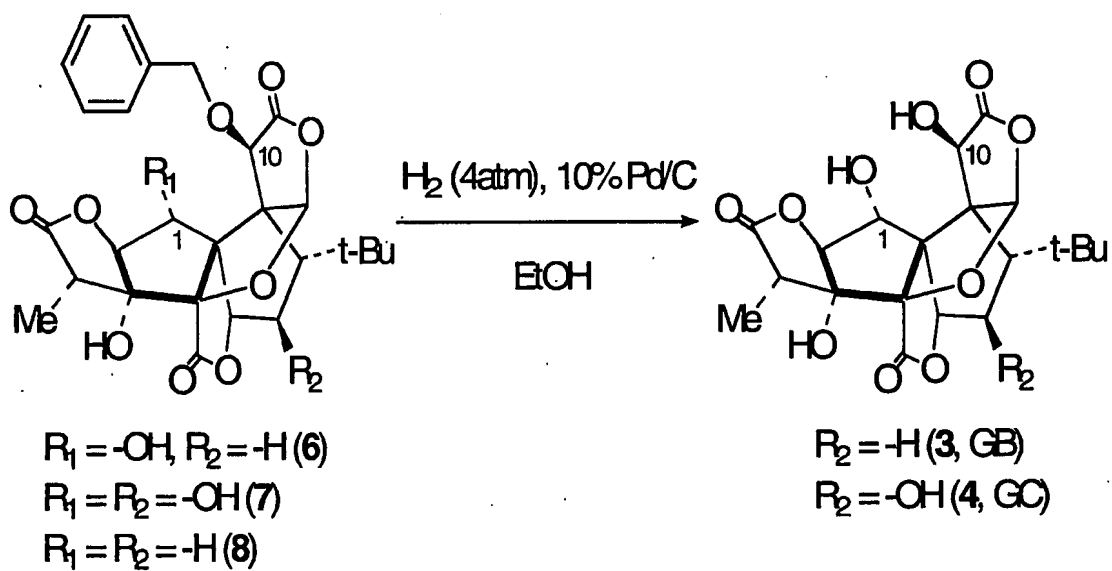
FIGURE 3

$R_1 = -H \text{ (GB)}$   
 $R_1 = -OH \text{ (GC)}$

| Reaction conditions: | alkyl halide (10eq.)              | $K_2CO_3$ (10eq.)                      | DMF, 0.5 – 10 h, r.t.                        |
|----------------------|-----------------------------------|--|--|
| R                    | ratio 10-O/1-O in GC <sup>a</sup> | separation of the mixture <sup>b</sup> | deprotection method                          |
| benzyloxymethyl-     | 1.4 : 1 <sup>c</sup>              | +                                      | $H_2$ , Pd/C, 1 atm                          |
| benzyl-              | 14 : 1                            | ++                                     | $H_2$ , Pd/C, 4 atm                          |
| p-MeO-benzyl-        | 20 : 1                            | --                                     | CAN or $H_2$ , Pd/C, 1 atm                   |
| allyl-               | 5 : 1                             | --                                     | 1) $t$ -BuOK, 100°C;<br>2) 0.1 N-HCl, reflux |
| cinnamyl-            | 5 : 1                             | --                                     | 1) $t$ -BuOK, 100°C;<br>2) 0.1 N-HCl, reflux |

<sup>a</sup> ratios for GB were similar or better;<sup>b</sup> + = good, - = bad;<sup>c</sup> (Corey, 1992)

FIGURE 4



Compound 8 - no reaction.

FIGURE 5

